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DEVOTED TO SCIENTIFIC BEE-CULTURE AND THE PRODUCTION AND SALE OF PURE HONEY.

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Dr. J. P. H. Brown's Address.

For several weeks we have been obliged to delay the publication of Dr. J. P. H. Brown's address before the National Convention at Lexington, owing to its length, but not one paragraph or sentence could we omit. We give it this week in its entirety, on page 347, and bespeak for it a careful perusal.

The Doctor ranks high in his scientific attainments, and has spent much of the past season in practical experiments. It will be observed he inclines to the opinion that the Syrians are the progenitors of the yellow species, in which, we believe, he agrees with Prof. Cook, and which opinion we long have held. Particularly gratifying is the result of his measurement of the tongues of the different races, proving conclusively that we were correct in our repeated assumptions of the improvement of the Italian bees in America, and Italian bee-masters acknowledge that we have not permitted any deterioration. In view of what has been accomplished in this line, what a field is opened to our careful breeders to engraft upon our best bees the desirable traits of the newer races, if they possess any. Italy and all Europe look to America for the coming bee—let us not disappoint them.

While calling the especial attention of all American apiarists to the two

concluding paragraphs in Dr. Brown's address, we thank him for his able constructive indorsement of the utterances of the BEE JOURNAL on the same subject.

Canadian Honors.—The following letter has been duly received by the editor of the BEE JOURNAL:

T. G. NEWMAN, Esq., Chicago.
Dear Sir:—At the annual meeting of the Ontario Bee-Keepers' Association, you were, by resolution, made an honorary member of the Association. I enclose your membership ticket.

Yours Respectfully,
R. MCKNIGHT, Sec.

The ticket was accompanied by a very neat and attractive copy of the "Constitution and By-Laws," with the list of officers for the present year. It is needless to say that we appreciate the compliment. The tasteful appearance of both the Constitution and member's ticket bespeak great credit for the efficient Hon. Sec., R. McKnight, Esq.

The Texas State Bee-Keepers' Convention will be held at McKinney, Texas, on Tuesday, April 25, 1882.

The editor of the *South and West* is being imposed upon by Lizzie E. Cotton, who is endeavoring to work upon bee-keepers, by giving flattering yields of honey with her "new system of bee management," and "controllable hive." After the hundreds of persons who have reported that they have sent her money and get no returns, it seems strange that any one should be deceived by her advertisements. She promises to use the *South and West* to give further reports. If that paper will thus freely give them, after she has been refused advertising space in all the respectable journals of the country, it must be totally in the dark about the matter. We hope, however, that the *South and West* will not so impose upon its readers, after this warning. We have no interest in any hive, and only point this out to our cotemporary, in justice to it and its patrons. In many localities the present season has been exceptionally good for honey production, and large yields are reported in almost every kind of hive. Such, therefore, should be credited to the locality or season, or both, and not to any form of hive, and there is no necessity for any one to be deceived by such statements, and inveigled into sending money to irresponsible persons for hives or bees.

The Drouth in Europe.—The excessive heat and drouth of the past summer has caused a shortage of one-fourth on the crops in Europe, including the honey crop. France will have to import over fifty millions of bushels of wheat to supply her home consumption. England, Austria and Germany also report a shortage. Hay is so short in Germany as to cause much anxiety, and Consul Warner writes concerning it as follows to the State department at Washington:

On information derived from a very good source, it was ascertained that the present prices for hay are double those of last year. It would be unfortunate for the wretchedly poor laboring class in Germany if anything like a failure in crops should happen that is now predicted. In my opinion, it would be the cause of greatly increasing the tide of emigration to America, the land that has an attraction surprisingly wonderful for the German peasant. Their sole ambition seems to be turned in the direction toward America. Even the old and infirm become comparatively younger whenever America is talked about in their presence, and they are told of the abundance of breadstuffs that is to be had there.

Old Combs.—We see the following item going the rounds of the agricultural papers:

Old combs can be nicely cleaned by pouring water over them and throwing it out with the extractor; pare off the moldy part with a knife.

Such advice is too antiquated—it might have passed ten years ago, but will not do now. Better to melt up the old combs and give the bees comb foundation. It will pay better than to fuss with any "old comb" remedy, particularly if it is moldy.

Mr. S. D. Buel's crate for honey, on exhibition at the Chicago Convention last week, is now in our museum. See its description on page 350 of this JOURNAL.

"I would not have missed attending the Chicago Convention for \$20; the discussions were so very instructive." So said one who visited our office four days after the Convention closed. Such discussions are very interesting, and in some respects the late Chicago Convention was a model affair.

It will pay to devote a few hours in getting up a club for the BEE JOURNAL. Read the list of premiums on another page, and take advantage of the fall gatherings to get up clubs.

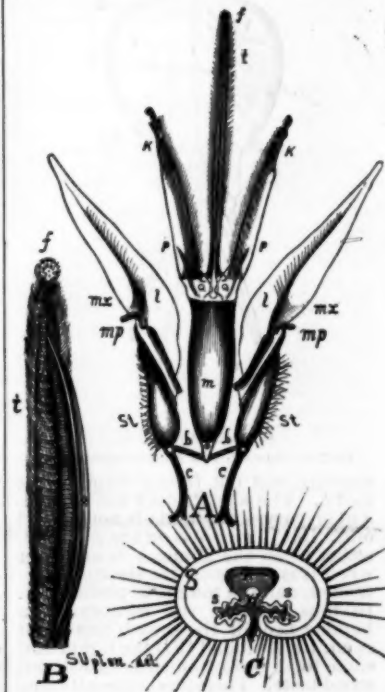
CORRESPONDENCE

Read before the Association for the Advancement of Science, at Cincinnati, O.

How the Bee Extends its Tongue.

PROF. A. J. COOK.

The figure, from Cook's Manual of the Apiary, gives an accurate idea of the structure and parts of the tongue of the honey bee. A gives the parts as they appear when extended; B shows the ligula with the tubular sheath (s) fully extended, and C shows a cross section of the ligula when the sheath is not extended. In this figure,



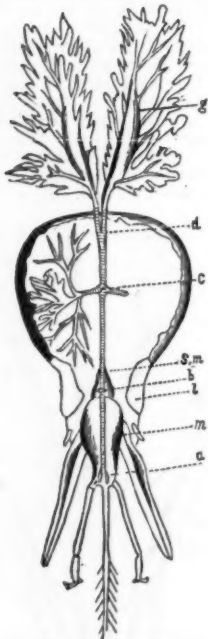
Tongue of the Honey Bee.

as represents a colorless membrane, which is usually folded as seen in the figure, but which is put on the stretch, when the sheath is distended as seen in B. The central rod (r) is essentially a tube, as I showed two years since in the AMERICAN BEE JOURNAL, vol. 15, page 490; but it is slitted below, so that by the use of the muscle r, in C, the bee can open this along its whole length. This tube, and also the sheath (s) connects through the tubular mentum (m in A) with the esophagus, and so with the stomach. Just at the base of the mentum, as shown by Mr. Justin Spaulding, in *American Naturalist*, vol. 15, page 113, this tube receives the tube from four large compound racemose glands, two of which are in the head and the others are in the thorax.

We see, then, that secretions from these glands may be poured into the tube of the central rod, or into the tubular sheath. The tubular rod opens at the tip of the ligula (*f* in *A*), but the tubular sheath is imperforate except at its base, where it joins the tube of the mentum, and so has connection with the duct of the glands, with the oesophagus, the mouth and the tube of the central rod.

When the mouth-organs are not in use, the tip of the ligula, *f* in *A*, extends only to the tip of the labial palpi, *K*, *K* in *A*, and all the parts, *t*, *K*, *K*, and *m*, *m* in *A*, are doubled back under the head. By the action of several pairs of muscles, variously attached to these parts and to the head, these parts are straightened, preparatory to use; then by the injection of liquid into the tubular sheath, the ligula is fully protruded. By holding a bee between the fingers (a bumble bee is the best), we can see the tongue vary in size as it is protruded or retracted as we offer it sweets. Of course, a good lens is necessary in this demonstration.

The source of the liquid that extends the tongue is, I think, that which comes from the glands already mentioned. If we take a dead bee that is not rigid, and whose sucking-stomach is full of honey, and press on the abdomen, the nectar will come forth from the mouth-



Glands and Tube,

Diagram reduced from American Naturalist.

opening, and not from the end of the ligula. The sheath does not expand, and of course the ligula is not pushed out. But if we press on the mentum, either when the stomach is empty or when it is full, then the sheath is distended, and the tongue is pushed out. In thus pressing the mentum of a bumble bee till the sheath was burst open, I have found that the liquid that came forth was often entirely without sweet taste. Therefore, unless it came from the salivary glands, it must have come from the glands described above. It is hardly supposable that the mucous from the tube would be sufficient. Again, it is just as necessary for the tongue to be thrust out—yes, and more necessary—when the sucking-stomach is empty, as when it is full. But if nectar from the stomach is what is used, how would the bee extend the tongue when the sucking-stomach was empty? The enlarged ducts from the glands would, on the other hand, always have the material ready to effect this important purpose.

It has been suggested that the secretion from these glands is used to change the nectar into honey, or in case the bees are fed cane sugar, to change a part of the cane sugar to grape sugar. That such a change is brought about is certain, but it is done in the stomach, and if the secretions

referred to perform this function, they must be carried down with the honey. Thus, they would perform two functions, one a physical and the other a chemical. This is thought to be true of our own saliva, by many physiologists. It certainly aids in comminuting the food, and many think that it aids in transforming the starch of the food into grape sugar.

Lansing, Mich., Aug. 18, 1881.

For the American Bee Journal.

How I Winter Bees Successfully.

G. W. ZIMMERMAN.

After 29 years' experience with the movable comb bee-hive, my success has depended on judgment as regards the winter, whether mild or severely cold for a long time, and the condition I find my bees in. First, how to prepare them for winter, and the treatment thereafter. There has been so much written on this point, I will only say see that each colony has 20 to 25 pounds of honey in September—whether gathered early or late makes no difference, so it is ripe, with proper winter passages through the combs. I regard it as essential, when the bees are having their last flights in the fall, to remove the cloth or honey board and place two sticks across the frames, then a piece of coffee sacking single or double; lay thereon two very dry bricks, not too hard burned; now I use clover-chaff, sawdust, fine straw and forest leaves well mixed together, with which I cover the sacking and brick 4 inches deep. This will absorb all the moisture arising from the bees. Thus treated, we will hear no more about taking out the top packing, drying it, and putting it back again. The above preparation will do for in or out-door wintering.

I have tried the following experiment several times, with success in saving my bees: A few years ago the bees were nearly all dying off with dysentery in this neighborhood. I examined my 65 colonies in the house, and found nearly all uneasy, very wet, and bodies distended. I procured a stove, set it up in the house, and removed the top cloth and front block, and heated the room quite warm. All the bees that were affected with dysentery came out all over the hives. I done this twice, from evening till midnight, keeping it dark; they all dried off, and clustered quietly back in their hives again. They had discharged their feces coming out and going back. The result was, I saved all but two queens. I will practice this again if any become uneasy, and give the result in the spring.

Napoleon, O., October 8, 1881.

For the American Bee Journal.

My Honey Report for 1881.

G. M. DOOLITTLE.

By turning to page 217 of the BEE JOURNAL for 1881, the reader will find that my bees were united down to 30 colonies, to get them in shape so I could reasonably expect a profit from them; and how it was so wet and cold up to the 27th of June that the bees could do but little on white clover, as well as a full report of my apiary up to that time.

On June 29th the weather became favorable, and the bees went to work in earnest on the remaining clover so as to store a little surplus. Basswood bloom opened July 8, and I expected to see a "rush" made for it by the bees, as usual; but to my disappointment, there seemed to be but little honey in it, and when the end came my hopes were nearly blasted, for I had taken scarcely a box of honey up to this time. Basswood is generally my main dependence for a honey crop, but this season proved that nearly a failure from it may be expected one year in eight or ten. However, the bees were in the best possible condition to take advantage of it, so I could not blame myself for not having done my part well.

Red clover has not blossomed with us for several years past, on account of a worm working in the head, and I was quite a little surprised, along the latter part of basswood, to see fields of the large kind growing red with blossoms. As the fields became redder, I hoped the bees might yet store some from this source, but did not expect such a yield as was finally obtained. Teasel was also now in full bloom, and the few acres that were within the range of my bees' flight commenced to yield abundantly. The combs in the boxes commenced to grow as if by magic, and the bees poured out for the clover and teasel fields in about equal proportions, working from early morn till late at night. Thus 10 days were passed, when the yield gradually drew to a close, terminating about the first of August. Acres of buckwheat soon began to be white, but day after day passed and no yield from that source. Thus the season for 1881 was ended. Four years have now passed since bees in this locality have stored a surplus from buckwheat, so that with me a honey yield is the exception rather than the rule.

As a result of my season's work I have to report: comb honey, 3.317 lbs., and 718 of extracted, giving a total of 4.035 lbs., or 134½ lbs. to the colony for an average. The 30 were increased to 80, which are in good condition for winter. When spring opened I only had one really good colony, and this I concluded to work for extracted honey. I will give the result, so the reader may know the amount of honey gathered from the different sources: Willow, 5½ lbs.; apple, 19¼ lbs.; white clover, 58¼ lbs., basswood, 97 lbs.; red clover and teasel, 232 lbs.; making a total of 412 lbs. I have also reared and sent out 83 tested queens the past season, which, of course, quite materially lessened the yield of honey.

I worked an apiary of 15 colonies away from home, and from this I obtained 874 lbs. of box honey, and 1,400 lbs. of extracted, giving a total of 2,274 lbs., or 151½ lbs. per colony.

Nine years ago I commenced to keep a correct account with the apiary, and I find, by looking over said account, that the average yield of honey per colony for the last 9 years foots up 92 pounds for each year. Thus, if a man keeps 100 colonies of bees, he will have 9,200 lbs. of honey for his yearly income, worth at least 15 cents per pound, giving a cash income of \$1,380. Who will say bee-keeping does not pay as well as any other pursuit in life?

One result of the past season has pleased me very much, which is that nearly all our colonies of bees gave about an equal result. I have been breeding for years to see if I could not get all colonies to come up to the standard of the best, and not have one colony give a large yield and another nothing. When we, as apiarists of America, can so perfect our bees that all colonies shall give as good results as have been obtained by the best in the past, then there will be no need of further importation of bees, for *Apis Americana* will be the best bee in the world.

Bordino, N. Y., Oct. 18, 1881.



MISCELLANEOUS.

District Meeting in Indiana.—The Indiana Farmer gives the following notice:

As will be seen by the notice given last week, Mr. Charles Schofield, Vice President of the State Bee-Keepers' Association for this district, has called a meeting of the bee-keepers of Marion and adjoining counties, to meet on Saturday, Nov. 5, for the purpose of organizing a local Bee-Keepers' Society. There is quite a large number of bee-keepers within the territory

embraced in the call, and there is no reason why we should not have a good, strong local association. There is no question as to the benefit to be derived by societies of this kind, and we hope there will be interest enough shown to make the meeting a success.

A Fierce Combat.—The Louisville Home Journal of last week tells the following little story concerning the fighting qualities of the Cyprian bees:

A devotee of apiculture within hearing of the bells of Eminence, Ky., procured a colony of Cyprians, of which he was very proud. But one day his pets became excited, and made a vigorous attack upon their master. Retreating to the house, he put on his veil and gloves, tied strings around the ankles of his pants, and went out with smoker, etc., determined to tame them. He forgot, however, a small hole in the crown of his hat, and in an unmentionable part of his pants, of which, after the regulation amount of smoking, about 20 vigorous bees in the hat, and as many in the pantaloons, reminded him most forcibly. The bee master retreated, still fighting for mastery. The battle lasted all day. The master was forced to run over into another county. Every hand on the place was routed; the horses and cattle were stampeded; dogs and cats were driven into the brush; the poultry came next, and bolted for the woods; sitting hens and ducks were driven from their nests, and night at last put an end to the conflict. The bee master did not attend the Bee Convention last week, but there is no need to ask why.

Good Blood Tells.—The Cincinnati Grand Bulletin, very aptly puts it thus:

It is needless to recommend to the bee-keeper who gets the best blood in his barn, to also keep good blood in his hives. Blood pays in all cases, and if our farm would flow with "milk and honey," we must adopt the best breeds and best appliances. The prime object in making a bee farm, is to provide pasturage at a time when the bees do not get honey from what is termed, "natural sources." The first thing our bees want in spring is pollen, and we can imagine with what admiration the first pollen-laden bee is greeted as it enters the hive.

As we have so often asserted, "best bees" and "best pasturage" are the "winning cards." We are glad to see our position on them so generally endorsed.

Bee Pasturage.—Our Home and Science Gossip records itself as follows:

Among our valuable bee-exchanges, we include the AMERICAN BEE JOURNAL, Chicago, Ill., an eight-page weekly, which is the largest paper we receive devoted exclusively to bee-culture. In the number for Sept. 28, Dr. Tinker speaks very highly of what he terms the "golden honey plant," and claims for it the prestige of eclipsing all the August and September honey-producing plants, while Mr. T. G. Newman, the editor of this valuable paper, says "every bee-keeper should lend encouragement to the developing of new honey plants, as sometimes the more popular varieties are not suited to all climates and soils." We deem this very sensible advice, and hope all our bee-keeping readers will take pains to heed it.

The Marshall County Bee-Keepers' Association will meet at Marshalltown, Iowa, Saturday, Nov. 5, 1881, at 1 p. m., in Judge Bradley's rooms, Woodberry Block. Subject for discussion, Wintering.

J. W. SANDERS.
Le Grand, Iowa, Oct. 25, 1881.

CONVENTION NOTES

Read in the National Convention.

The Different Races of Honey Bees, and their Geographical Distribution.

DR. J. P. H. BROWN.

The bee bears the same relation to the other orders of insects, that the Caucasian race bears to the other races of mankind: it is the highest type of insectian form and development. Endowed with instinct, and "a kind of reason, differing, perhaps, only in degree from that of man, these insects out-rank all other articulates." In the fossiliferous history of our earth, the bee does not date far back, but is the last to appear upon the earth's surface.

This insect has been placed by entomologists in the order Hymenoptera family Apidae of Latreille, genus *apis*. The genus is subdivided into various species; probably not more than seven or eight. Some of the old writers have enumerated many species under the generic name "*apis*," regardless whether they belonged to the social or solitary group.

The species "*apis mellifica*," which is our domestic honey bee, is the one most generally known, and is the one to which I shall confine myself in this paper. The black or German bee, the Italian bee, the Cyprian bee, the Egyptian bee, and the Holy Land or Syrian bee, are often referred to as distinct species, but neither of these races or varieties have sufficient physical characteristics to entitle them to be so classed. The category of characteristics upon which species are based, embraces not only marked differences in the proportion of the parts and in the absolute size of the whole animal, but it also implies a difference in habit, and a capability of indefinitely perpetuating the characteristics of the animal by sexual reproduction.

Hybridity among species very rarely occurs; varieties, on the other hand, very easily cross, and such crosses are prolific, while true hybrids are not usually so. I use the term hybrid here in its true significance, and not in the sense in which it is commonly applied by bee-keepers.

Whether the different varieties of the honey bee originated by the touch of the Divine hand from a common centre, or whether they emerged into existence, according to the theory of evolution, with all their distinctive peculiarities, at the localities where found, I will not discuss, but will simply observe, that from all the light we have before us, both sacred and profane history, bearing upon the nativity of our domestic bee, we are forced to locate it in the country now known as Syria. How far the type of this bee, inhabiting this locality, has been changed by the agencies brought to bear upon it through the thousands of years of its existence, we have no positive knowledge; but we do know that when a race or variety of animals are taken from one locality into another where there is a difference in food, and different climatic agencies brought to bear upon them, that they will gradually undergo some change in their physical characteristics. As illustrative of this fact, Mr. Alfred R. Wallace, author of "Theory of Natural Selection," has observed that butterflies, of the family "Papilionidae," inhabiting Sumatra, Java and Borneo, are almost always smaller than the closely allied species of Celebes and the Moluccas; the species or varieties of the small Island of Amboyna, are larger than the same species or closely allied forms inhabiting the surrounding islands; the species found in Celebes possess a peculiar form of wing, quite distinct from that of the same or closely allied species of adjacent islands; and numerous species which have tailed wings in India and the western islands of the Archipelago, gradually lose the tail as we proceed eastward to New Guinea and the Pacific.

In Angora, not only goats, but shepherd dogs and cats have fine fleecy hair; the wool of sheep changes its character in the West Indies in 3 generations. M. Costa states that young oysters, taken from the coast of England and placed in the Mediterranean, at once altered their manner of growth, and formed prominent diverging rays, like those on the shells of the proper Mediterranean oyster.

We find the same law to hold good in the vegetable world. Apple trees of winter varieties taken from Northern nurseries and transplanted in the Southern States, mature their fruit early in the fall with the loss of its keeping qualities. Improved varieties of tomatoes that grow to perfection at the north, when planted in the extreme south will degenerate in a few seasons into small red balls. Some 10 years ago I planted for the first time the

Trinidad sweet potato, then recently imported. Then it was of globular shape, white, and rather coarse grained. The same potato now, on my grounds, under careful culture, has entirely changed its original shape and qualities. It has become oblong in shape, of yellowish color, fine grained with an abundance of saccharine matter.

In commenting upon these alterations of type in vegetables and animals, the author previously quoted observes that "many of these curious modifications may, in time, be due to other causes than climate only, but they serve to show how powerfully and mysteriously local conditions affect the form and structure of both plants and animals, and they render it probable that changes of constitution are also continually produced, although we have, in the majority of cases, no means of detecting them."

Herr Vogel, a distinguished scientific apiculturist of Prussia, in a paper upon the "Mixed Breeds of Bees," refers to varieties as follows: "If the bees of any particular district are distinguished by a marked propensity for swarming, or by any other special characteristics, we are warranted in designating them as a variety. Thus in my estimation, the heath bees of Luneberg, or those of lower Austria, etc., are simply new varieties of our well known black bee. The peculiar constitutional properties which characterize varieties are rooted in the physical or spiritual nature of the insect, and elicited by the kind or quality of the pasturage, by particular modes of management, by diversity of climate, or some other dominating peculiarity of the district. Accordingly, these constitutional properties disappear, or are lost by lapse of time, by removal to a different locality, and thus subjecting the insect to other climatic influences, and other conditions of management or pasturage."

Reasoning a priori, we are forced to the conclusion that the Syrian, Cyprian, Egyptian, Italian and black bees are simply varieties of the species "*apis mellifica*," and are of common origin. We are also confirmed in this conviction by their comparative characteristics. In cultivating any of these breeds of bees, there is a continual, though slight disposition to sport from a precise standard of physical and psychological characteristics to an assumption of some of the peculiarities of some other breed. This seems to be a rule attending the breeding of all cattle, horses, sheep, swine and fancy breeds of poultry, that lack that fixedness and individuality of character sufficient to stamp such breed as a distinct species. The black bee and the Cyprian, though possessing probably more type of character than the other varieties, often sport from an exact standard, both in the queen and worker progeny. Black queens are often found as yellow as some imported Italians, and in the same apiary of blacks, the workers of one colony may be larger in size, and of a less black color than the rest. In fact, I have often seen black bees when their abdomen was distended with honey, that showed 3 bands quite as distinctly as some dark Italians.

Cyprian queens come nearer duplicating themselves in appearance than any other breed, but they at times, sport. The workers generally have the yellow abdominal bands bright and distinct, with a delicate fringe of yellow hair bordering the posterior segments of the abdomen; but sometimes this hair is whitish, and the fringe heavy, with nothing to distinguish them from the Syrians and Egyptians. On the back between the articulations of the wings of the Cyprians, there is generally a tuft of bright golden yellowish hair, covering the honey shield, which is also yellow. These marks are claimed to be a distinguishing trait in their case, but if you will carefully examine your bright Italians and Syrians, you will find many bees with the same mark. I find many Syrian queens marked like the Cyprians, but then at times, we find them as dark as black queens. The same observation applies to the Egyptian queens. Italian queens, as we receive them from Italy, vary very much in appearance. While some few are bright and yellow, the majority will produce three-banded workers. I have seen, and received myself, direct from that country, some that would produce some workers that could not be distinguished from blacks.

When the mental peculiarities of these breeds are compared, they point as unmistakably to the common origin, as do the physical characteristics.

The Italians strongly adhere to their combs; the Cyprians also possess the same propensity, only not in so marked a degree. The blacks, when alarmed, will scamper and desert their brood; the Syrians show the same trait, but not to so great an extent. The Egyptian bees have a great propensity to build queen cells and swarm; the same can be said of the Cyprians and Syrians, and now and then we

find the same disposition among Italians. I have had colonies of blacks to show the same propensity.

The mass of bee-keepers are fully acquainted with the blacks and Italians, but are unfamiliar with the Cyprians and Syrians. There seems to be great diversity of opinion in regard to the merits of these two last named varieties, which have been recently introduced. If they should add nothing to increase the honey production of our country, I regard their introduction into America as a means of throwing more light upon the natural history of the honey bee, and to those two enthusiastic bee-keepers, Messrs. D. A. Jones and Frank Benton, who were the first to import these bees direct, the scientific apiculturists owe a debt of gratitude that can never be paid.

Aside from the aid they have been to scientific investigation, they have qualities, which, in my opinion, can be made available in an increased production of honey. I have found the Cyprian queens wonderfully prolific, and the workers very industrious. True, they have some ugly traits of character—they are most excellent fighters when provoked, but, with a proper application of smoke and care and gentleness in opening the hive, avoiding all sudden jars, I can work among them as easily as with the Italians. During the past season I have found that in a few generations they lose, to a very great degree, their fiery temperament, and become more like the Italians in disposition.

Of late years much attention has been paid to secure bees with long tongues, and the microscope has been brought into requisition to determine their length. The major portion of all such experiments signify fail to give satisfactory results, from the fact that the observations are either made upon dead muscle, or when the muscles of the tongue are in a passive condition. The length may thus be correctly determined, but it fails to give the degree of working capacity of this organ when in a "state of action." Therefore, only such experiments that seek to measure the distance the tongue of the living bee can pass down the corolla of the flower, will prove of any advantage to bee-keepers.

In order to secure some definite results in this matter, I have constructed a small instrument which I call (for the want of a better name) a *linguameter*. This instrument contains a cup to hold diluted honey, a float, and a dial of 32ds of an inch. The bee's tongue passes down to the foot, through meshes of $\frac{1}{8}$ of an inch, formed by very fine wire. As the honey in the cup is taken up, the float descends, and marks the distance on the dial. It is not claimed for this instrument to give the actual length of the tongue, only its reaching capacity through a given sized aperture. Six colonies each of black bees, imported Italians, home-bred Italians and Cyprians were tested with this instrument with the following result:

The blacks aggregated 42 32 inches; two colonies reached 65-32 each; three, 7-32 each, and one went 8-32. The imported Italians aggregated 45-32; three colonies went 7-32 each, and three 8-32 each. My home-bred Italians summed 48 32; one colony reached 7-32; three colonies 8-32 each, and two went 8 1/2-32 each. The Cyprians aggregated 49 32; four reached 8-32 each, and two went 8 1/2-32 each. One colony of Syrians (queen from Mr. Jones) was tested with a result of 8-32.

While these experiments do not show as great a difference in the reaching capacity of the tongues of these varieties of bees as many persons might suppose, they demonstrate the fact, other conditions being the same, that the Cyprians and Italians have the ability to collect the most honey. During the past season, with me, the Cyprians have been ahead as honey gatherers, the Italians next.

In the geographical distribution of the yellow varieties of *apis mellifica*, we find them all to be confined to certain districts lying between the 24th and 46th degrees of north latitude of the eastern hemisphere. If we look for these districts or sections of country upon the map, we will find them to be generally isolated, and hemmed in by water, desert or mountains, which would make communication with outside countries dangerous and difficult for the migration of insects. We also find that these countries or districts do not generally abound in a great abundance of honey producing plants, that in some seasons honey is scarce, and great exertion is required in order to get a subsistence. We also further find, as the country becomes more expansive, more easy of access, with a greater honey-producing flora, that the yellow bee gradually becomes emerged into the black bee, and thus we find this variety common in every portion of Europe, excepting a very small part of Switzerland, the major portion of Italy, and the whole of Greece.

Egypt, no doubt, was one of the first countries after Palestine that was populated by both man and the honey bee. Com-

mercial relations were early established between these two countries. In the book of Genesis, we are told that Jacob sent his sons down into Egypt to buy corn, and ordered them to take along a little honey. As there was a trade in honey, it is safe to infer that there was a knowledge of the insect that gathered the honey. In this circumscribed country, bounded to within some 80 miles on the east by the Red Sea, on the south by the Nubian desert, on the west by Libyan desert, and on the north by the Mediterranean Sea, the Palestine bee was modified in characteristics by the different pasturage and influences brought to bear upon it.

We are told by ancient history, that the honey bee was first carried from Egypt into Greece by Cadmus. Here, attention was paid to its culture; the learned scientists of those days spent years in studying its economy, and volumes were written describing its natural history. Honey and wax became a large article of traffic. Here, climatic agencies and other influences brought to bear upon it through long ages, changed its Egyptian peculiarities.

This modified bee was carried by the Romans into Italy, and in the most isolated districts of that country maintained, with possibly some modification of type, its characteristics. The best marked Italians are found in the northern provinces. The yellow bees, most likely of Egyptian origin, are found in the northern part of Africa, in those countries bordering the Mediterranean, and in Nubia.

Cyprians, beyond doubt, are descendants of the Syrians, modified and changed by isolation on the Island of Cyprus, which is located in the eastern portion of the Mediterranean, some 80 miles from Palestine.

The black or German bee has spread with European emigration into nearly every portion of the world. It was introduced, it is believed, into Pennsylvania from Germany about the year 1627, and was transported to South America in 1845. It can now be found in South Africa, West Indies, Sandwich Islands, New Zealand and Australia.

As the black bee is so widely scattered, placed under so many climatic influences, and subjected to such a diversity of forage, it would be most desirable to secure specimens from all the extreme parts for comparison. Such comparison and examination might throw further light upon the mysterious process of modification of characteristics; for with all our study of the nativity and history of the honey bee, there will always be left something still for future study.

In conclusion, I will observe that in my judgment, if the ideal bee "*apis americana*" is ever materialized, it can only be accomplished by a rigid system of eclectic breeding of the varieties of *apis mellifica* now at our command. To make such breeding a success, we must have a standard of attainment to govern it. Without such standard, the breeder would be no better than a blind man groping his way in the dark. Science, intelligence, good sense, order, system, and never failing industry must play prime factors. The breeding stock, both male and female, must be selected with the best of judgment; the queen cells must be developed under the very best possible conditions, not in a little 5x6 inch nuclei with a handful of bees, but in colonies with not less than several quarts of bees of the right age to do such work. Every under-sized and defective cell should be rejected.

The bee-keeper who seeks to grasp this ideal bee by his own culture, must take no stock in the absurd doctrine of the "survival of the fittest." Your improved breeds of horses, your short-horned cattle, your fine breeds of sheep and hogs, your fancy breeds of poultry, were never brought about by the "survival of the fittest," and they allowed to "paddle their own canoe." What has been done by stock breeders has been accomplished by a most careful system of selection and management, backed by untiring industry and perseverance.

The Michigan State Bee-Keepers' Association, will convene at Battle Creek, on Thursday, Dec. 8, 1881. We have reason to expect one of the largest and most interesting meetings we have ever held. Let all arrange to be present. All District Associations should send delegates. Each person should come with their best experience in their hands, ready to hand it over to the others of the fraternity. Commutation rates are expected on railroads. A. J. COOK, Pres.
T. F. BINGHAM, Sec.

A meeting will be held at Winterset, Iowa, on Thursday, Nov. 3, 1881, to organize a District Convention. All the apiculturists of the vicinity, as well as from other States, are cordially invited. A. J. ADKISON.

Northwestern District Convention.

The Northwestern District Bee-Keepers' met in Convention at the BEE JOURNAL office, in Chicago, on Tuesday, Oct. 25, at 2 o'clock p. m., Dr. C. C. Miller, President, in the chair.

The minutes of the last session were read and approved.

The Treasurer's report was submitted and accepted.

New members were enrolled and annual dues paid.

Election of officers being in order, Mr. Ira G. Bull and Dr. Haskin were appointed tellers. Dr. C. C. Miller, receiving a majority of all the votes cast, was declared duly elected.

F. W. Chapman was elected Vice President.

C. C. Coffinberry was re-elected Secretary, and T. G. Newman was re-elected Treasurer.

The Executive Committee were instructed to call the next annual meeting of the Society to take place on Wednesday and Thursday, during the last week of the Exposition.

T. G. Newman offered the following resolution, which was adopted unanimously:

Resolved, That the North American Bee-Keepers' Society be invited to meet with the Northwestern District Society in annual consolidated session at Chicago, during the Exposition, in the fall of 1883.

Best Race of Bees.

Mr. F. W. Chapman has Cyprian bees, but cannot speak favorably of them as better honey gatherers than the Italians. They are not so desirable in point of disposition, but they may develop some superior traits. Has not tried the Syrian bees.

Mr. George Thompson has found the Cyprian bees a little more irritable than the Italian bees; he thinks they are earlier and later breeders, and hence thinks they are a desirable acquisition, if for no other purpose. He thinks they may be crossed with Italians to some advantage.

Mr. H. W. Funk finds Syrians more nervous and irritable than the Italians, but thinks they are not more liable to sting, if handled with care and nerve.

Mr. T. G. Newman: the Cyprians and Syrians have been in the BEE JOURNAL apiary less than one full season, which is not sufficient time to test them for points of superiority or inferiority.

Queen Rearing.

Mr. L. C. Wemple inquired if, to rear queens, a division of the colony would not produce good ones.

Decided in the affirmative, if the young bees were left in the queenless hive.

Question: Will queen cells left in the hive after a swarm has emerged, produce better queens than those reared in a hive made queenless? Decided there was no preference.

Mr. C. W. McKown stated he had lost about 50 per cent. of the young queens he had reared this season. Why is it?

President Miller thinks much loss is occasioned by a sameness in hives in position and appearance, and by placing them in rows at regular intervals. He reverses the entrances of his hives containing virgin queens, and with good effect.

Mr. L. H. Scudder said he had heard the loss of young queens attributed to the birds. His nuclei are placed in the orchard, and he has never had better success with queen-rearing and mating than this season, and the birds have never been more numerous in the orchard.

Mr. Funk but seldom loses queens from his fertilizing nuclei; he has them sitting around wherever most convenient.

Mr. Thompson lost about 65 out of a hundred young queens early in the season, when birds were most numerous; but later, when the birds were not so plenty, he has had comparatively good success.

Several persons mentioned having seen bees fighting birds.

Question: Where the best queens are desired, is it preferable to give the queen-rearing colony eggs or freshly-hatched larvae?

Answered by several: Eggs are preferable. Remove the queen, eggs and young larvae from a strong colony, then select two or three combs of freshly deposited eggs from the colony you wish to rear queens from, and place in the centre of the queenless colony. Retain the first completed cells, and destroy the others.

President Miller has reared some of the best queens in this manner, and some of the very poorest he ever saw.

A communication was read from J. Messimore, Millwood, Ind., entitled

The Dzierzon Drone Theory.

I am sorry that I cannot attend the Chicago Convention this session. Had it been a month earlier I could have attended, but now the time approaches when bees must be prepared for winter, and as I have not made much preparation in that direction as yet, I must be getting them ready. I anticipated being with you, but circumstances will prevent it. I intended, if I could have been present at the Convention, to give the Dzierzon theory concerning the drone progeny of pure, but mismatched queens, a little probing, as I see that many apiarists are beginning to doubt the truthfulness of that theory. When I first commenced the study of bee-ology I accepted the theory, but have, for some time, had serious doubts about it; but not having the means at hand, I have never experimented on it. One thing, however, I have observed, which led me to doubt the theory: I have had queens whose workers showed no signs of impurity whatever, and whose drone progeny were so uniform and similar that you could scarcely tell one from another. Daughters of such queens I have had mate with black drones, and, as a consequence, their drone progeny were just as dissimilar as their workers, not only in color but also in size. Now, how can that be accounted for if the Dzierzon theory be true? This led me first to doubt the correctness of the theory. Have we no apiarists in America capable of testing this matter, with the proper means at hand? Must we forever depend on men of other nations to demonstrate this matter to a certainty? Millwood, Ind.

How Increase--Natural or Artificial?

Mr. Thompson thinks the practice of natural swarming should be consigned to the shades of the past, with the discarded box hives, 10 and 20 pound boxes, and brimstone fumes.

Mr. Funk suggested that at times the trouble was not so much how to increase, as to the best methods of preventing it.

President Miller is opinion that all depends upon whether increase is desired.

Mr. C. W. McKown prevents swarming by clipping the wings of queens.

Mr. A. J. Hatfield has found that clipping the wing of a queen has a tendency to break up and demoralize the swarm, they frequently entering other hives besides their own, and creating great confusion among other colonies.

Mr. T. S. Bull much prefers natural swarming, and but seldom loses one; this season, with more than 40 natural swarms, he has lost but one.

Mr. Hatfield has found that his colonies which stood in the sun, without any shade whatever, swarmed most persistently.

President Miller has had them swarm quite as frequently where the hive was entirely shaded, as those standing in the sun.

The majority of opinion was that with plenty of shade over and room in the hive, the tendency to swarming was much lessened.

Adjourned till 7 p. m.

EVENING SESSION.**Bee and Honey Shows.**

The Secretary read the following communication from the State Vice

President of the North American Bee-Keepers' Society:

Peoria, Ill., Oct. 22, 1881.

To Northwestern District Convention:

During the late State Fair, held at Peoria, Ill., we were conversing with members of the Board of Agriculture with reference to the meager premiums offered by that body for bee-culture. We were told that it was the apiarists' fault, that they had not taken any interest in the matter. We were requested to issue a call for a Convention to assemble at Springfield, at the time of the meeting of the State Board of Agriculture, to take action in the matter. Bee-keepers of Illinois, is it best to issue this call? We would like to see a big show of everything pertaining to a first-class apiary at the fair of 1882, and we can have it only by working for it. Those of you who deal in supplies are the ones who would be benefitted more or less by this display, and are you willing to assist? Let us hear from the bee-keepers of Illinois on this question, whether it is best to call a meeting, or try to work up the desired result by writing.

LUCINDA HARRISON.

State Vice President.

On motion of C. C. Coffinberry, Mrs. L. Harrison, of Peoria, Ill., was made an honorary member of the Society.

The following resolution was offered by Mr. Coffinberry:

Resolved, That the Northwestern Bee-Keepers' Society indorse the action of the National Convention in encouraging bee and honey exhibits at State and Local Fairs and Exhibitions, and that Mrs. Harrison, Vice President for Illinois, and the Committee appointed by the National Society, have our hearty co-operation and encouragement in their labors in this behalf.

Mr. Coffinberry hoped the Society would take most positive and unmistakable action on the communication from Mrs. Harrison; the question of making exhibits at State, county and local fairs was one of the gravest importance to those engaged in bee-culture. It is not enough to form societies and hold conventions for the purpose of instructing bee-keepers as to the best methods of preparing bees for winter, or of producing honey for market, or as to the best race of bees; we have but half done our work when we have learned all the improvements our fellow-apiarist employs, or taught him all we know. There is a vast public which needs educating as to the value of honey for dietetic and medicinal consumption. Their prejudices must be removed, and a desire and taste created for honey, as now exists for sugars and syrups. Bee papers cannot accomplish this work, because they circulate wholly among that class of people who can already appreciate the value of honey; it cannot be done through the agricultural press, because nearly all farmers are already consumers, and utilize its economic properties; we cannot educate the masses through the metropolitan and general press, because they colate their reading matter with a view to interesting the general reader.

The speaker can see no plan for carrying on this educational work so feasible, as to take advantage of the large popular gatherings—and especially fairs and expositions—where pure honey can be exhibited in large quantities in its most attractive forms. Not only should the honey be exhibited and sold, but our beautiful and gentle Italians should be manipulated on the grounds, to attract the people through their instinctive curiosity; now and then a comb might be extracted and samples exhibited through the crowd; this, too, is a good opportunity to explain the process of granulation in honey, and how to liquefy it. The primary lesson in the consumption of honey can now be instilled on the public mind by having a quantity on sale in neat, attractive packages, and of proper sizes for family use.

By offering liberal premiums and encouragement for apicultural displays, the agricultural boards and managers are not benefiting honey

producers alone. If it be their duty to assist in developing the natural and possible resources of our country, they certainly by every means should encourage these exhibits. Our present product of millions of pounds can be easily developed into billions, and many millions of dollars be added to the productive wealth of the country. Certainly, at our State and county fairs, the apiarian department should be given a prominence at least equal to that of the horse, cow and sheep, and second to none.

Nor need bee-keepers fear that education will lead to over-production. We have, and there is springing up, a foreign demand for American honey that will consume, at remunerative prices, all the surplus we may have to spare, even though it be an hundred fold. Over-production, over-stocking and competition are fast losing their terrors for the reflecting mind, and stimulated consumption, generous rivalry, and co-operative effort are fast usurping their place.

Mr. T. G. Newman said that he indorsed most fully the remarks of the last speaker, and would give a few examples of the educating power of bee and honey shows.

Some two or three years ago Mr. Scudder, one of the members present, took several thousand pounds of honey in the comb to Canada to sell, and found it almost impossible to dispose of it. Since then, magnificent displays have been made at the fairs, and every pound at those displays was sold on the ground at good prices. Now Canada cannot supply her home demand, and this year has sent to the United States for thousands of pounds more. What has made the change? Consumers have been educated—have tasted of honey and found it good, as Solomon said, and now are everywhere demanding more.

At the St. Joseph, Mo., Exposition the honey and bee display attracted more attention than everything else on the ground, excepting the award of the prize of \$25 for the best looking colored baby!

In 1878, 180 tons of comb honey were sent to England; and at the Royal Agricultural Show it was arranged in a magnificent pyramid with a large sign, "American Honey," over it, and the "stars and stripes" hanging in graceful folds around it. This not only took the first prize, but created such a *furor* that the Prince and Princess of Wales and the Royal family came to the apiarian department in carriages to see it; alighting, they came in to examine it, and sought information regarding its production on so large a scale and in such tempting packages. A dozen crates of it were ordered for the Royal table, and, from the Queen to the peasant, all caught the enthusiasm. I was amused at some of the effects of this display that I noticed in London. While walking down several of the busy streets I noticed here and there a crowd had gathered and blocked up the sidewalk. Coming closer, I found the cause of the excitement; show windows had been filled with comb honey, and a card announced that it was American honey and for sale at 2s. 6d. per lb. (60 cents). There they stood and gazed upon it, their very eyes seemed riveted to the spot—but no word was heard—

"It seemed as though they saw a miracle,

And for very rapture ne'er would speak again,"

while their eyes feasted on the magnificent display of concentrated sweetness from

"The land of the free
And home of the brave!"

Not until sturdy policemen came to the relief of pedestrians could the crowd be dispersed. The order to "Move on; move on!" was obeyed, but only to let another crowd form a few moments afterward. I witnessed this scene over and over again.

This "word-picture" gives us a striking lesson—to exhibit and display our honey, and thus educate the masses who by thousands carry home the small quantity to delight their families, and give them health and strength both of body and mind, by the use of

this God-given sweet! How much better to do this than to feed our sweet babes and tender offspring upon vile glucose in the form of syrups, candies and condiments, and thus send them to an early grave or sow disease in their little systems, by permitting them to use the accursed stuff made from old clothes, boot-heels and dirt, which greedy and conscienceless men have made solely for the purposes of adulteration!

Yes; let us use every means to introduce honey to our neighbors—to tempt them with its beauty and beguile them with its sweetness. Let us take possession of every State, County and Local Fair, in the name of humanity, and educate the people with such magnificent exhibits of honey that they never can forget it. Distribute to the admiring crowd the evidence that honey is good, not only for food—giving warmth to the system, vigor to the vital functions, strength to the body and force to the mind—but that it is good for MEDICINE, healing many forms of disease and prolonging life.

Mr. Newman remarked that he had spent thousands of dollars to help open up the markets of the Old World to honey, and notwithstanding the fact that he had been roundly abused by short-sighted men for so doing, who feared that it would be an injury rather than a benefit, yet he was glad to see that the beneficial results were being noticed. Europe is holding out her hands to us and demanding tons of honey, when we have not a pound to spare—our home markets taking all we can produce with our limited number of bees; but sweetness enough is going to waste to produce billions of tons, and the speaker said that the time was coming when a revenue of millions of dollars would be received annually from foreign lands for honey that was now not gathered. He knew that intelligence and energy, coupled with improved implements and the "coming bee," would overcome all obstacles and contribute a supply of superior honey to all the markets of the world.

Mr. L. H. Scudder remarked that the masses of people needed education in the production and consumption of honey. Three years ago he, with a neighbor, went to Canada to dispose of their crop, but no one understood the value or merits of honey for home consumption; their only sales of extracted honey were in drug stores in very small lots for medicinal purposes. Finally, after two months spent in Canada in a vain effort to sell this carload of honey, they returned to the United States, and disposed of it in job lots.

The resolution was then unanimously adopted.

Increase of Bees.

Mr. Funk says it is best to increase if the swarming fever gets full sway; but, otherwise, run colonies as strong as possible.

Mr. Scudder thinks a moderate increase is most practicable, then double up when the honey harvest has ended.

President Miller adopts the plan as practiced by Mr. Doolittle to prevent the increase of colonies; by caging the queen when the swarm comes out, five days after destroy queen cells, return the queen, and generally they work without interruption.

Use of Separators.

Mr. McKown asked if any one had used sections filled with foundation, and without separators?

Mr. Scudder said his bees would not build straight combs without separators, even with full sheets of foundation.

President Miller would like to abandon the use of separators; but has never been able to pack his crates with sections built without.

Mr. Funk has not been able to get straight combs without separators.

Mr. Newman does not think straight combs can be built without separators, to the extent of meeting the full demands of the market.

President Miller has used wires stretched across instead of tin, but found the wires would not only sag, but were imbedded in the honey.

Mr. Palmerston has used perforated separators, which answered very nicely; but he does not know that they were any better than the full surface of tin.

Mr. Newman thinks unless they are better than the full surface of tin, they will prove impracticable, as they cost at least 50 per cent. more.

President Miller finds that in the fall bees fill up the sections better with separators nearly the full width of the box.

Mr. Scudder has found a great advantage in the use of separators in removing sections as fast as finished; he can remove a section at any time without disturbing the remainder.

Side and Top-Storing.

President Miller thinks there is an advantage in side-storing, inasmuch as the bees will begin storing at the side first in the spring. He does it in this way: When the honey season commences, he uses about 8 Langstroth frames, which gives him an extra space at one side; he then raises a brood frame from the brood chamber to the super, putting down a division board to take the place made vacant by the removal of the frame; he now places two cases of sections in the super, one on each side of the brood frame; in four days another case with sections is placed each side of and next to the frame containing brood, and this course is pursued till the super is filled with sections, and the brood frame returned to the brood-chamber. He has found, however, that some times they bulge the sections a little before the super is entirely completed.

It was suggested by a member that perforated separators would obviate this trouble.

President Miller explained that he utilizes the space at the side of the 10-frame Langstroth hive by putting down a division board, and can use it in the spring for stimulative feeding, or fall for winter feeding. He leaves the space unoccupied in summer, and finds it convenient as a pocket to set frames in when looking through the brood chamber. He has had some trouble with the queens going into the sections and depositing eggs.

Adjourned till 9 a. m.

WEDNESDAY—MORNING SESSION.

Convention opened at 9 o'clock, President Miller in the chair.

Pasturage for Bees—Over-Stocking.

President Miller stated that although many might not feel an interest in this subject, he thought all would sooner or later be compelled to give it attention.

Mr. Scudder being called upon, stated he had kept over 200 colonies in one location. Some seasons he thought all had done as well as a lesser number would; in other seasons he thought the locality was over-stocked.

Mr. Bull has kept over 200 colonies in one location. He thinks, in a good season, it is impossible to over-stock a good location.

Mr. Chapman thinks with Mr. Bull. He has kept 225 colonies in one locality, and does not think he was over-stocked. He will only run about 100 in one locality hereafter, because he cares for no more than he can take care of alone.

Mr. Coffinberry called for information: How many colonies can subsist in a good locality, with a good honey flow?

Mr. Thompson thinks in his location 1,000 colonies would not have over-stocked the past season.

President Miller has felt at times that his location has been over-stocked.

Mr. Thompson thinks bee-keepers will, sooner or later, plant for bees, as for cattle and sheep. He spoke highly of sweet clover.

Mr. Bull has no difficulty in eradicating sweet clover from his orchard. He thinks it no more difficult to destroy than ordinary weeds.

Mr. Wemple inquired if it would pay to transplant sweet clover?

Several stated it would, if taken up before the roots have penetrated.

Mr. Lucas has planted ten acres. He saw bees storing honey in boxes from it two weeks ago, after everything else had failed.

Dr. Haskin has had no trouble in exterminating sweet clover when he has not wanted it to remain.

Mr. Newman thinks this a most important topic. If it will pay to gather honey from white clover and basswood, it will certainly pay to keep sweet clover for them.

J. Lee Anderson has had trouble in his cornfield from sweet clover. He has been trying to exterminate it for two years, but as yet has not succeeded.

Mr. Thompson suggested that if mowed in June, it would bloom much later, and more profusely.

Mr. Scudder called attention to the Simpson honey plant (figwort). It is good for honey, but is difficult to develop to any extent. It is, however, a splendid honey plant, when properly developed.

The Secretary read a paper from Rev. A. Salisbury, Camargo, Ill., entitled

Can it be Accomplished?

There should be a uniform market price for graded honey of the same quality, and all the proceeds of the apiary, corresponding in value with all other lucrative vocations, in proportion to the amount of capital invested and labor expended to make it a success. However scientific and attractive any business may be of itself, if it does not remunerate capital and labor corresponding with other professions and pursuits, it loses its position of honor in the eyes of all the world, and at once becomes enfeebled, and time is the only arbitrator of its sad destiny. This has been accomplished in other pursuits—for example: The manufacture of gum boots and shoes. The several producing establishments of the country agree, and bind themselves in a penal bond of \$20,000, to produce the same quality of goods, and sell these goods at corresponding prices. The only cutting on prices is done in the hands of the retail merchant.

Can we not learn a lesson here, and pause but for a moment to think of the omnipotence of co-operation. Are those who jointly work in the apiarian business, whether in the person of an editor of a bee paper, or a producer of honey or supplies for the apiary, men and women of inferior ability? The response is in the negative.

Light was never brought out of darkness, or order from chaos, to reign at once in perfection, but by one in whom imperfection never existed. So we may expect our co-operative work, after years of labor only, to bear the semblance of perfection. We cannot expect men and women who keep bees and raise honey for the market, at once to see the importance of a National Society, supported by auxiliary State and County Societies, and the greater composed of delegates from the lesser, with duties not only to express the wishes of the producer, but to carry all statistical information to the highest authority, and clothed with power to cast a vote for the good of the whole. Can it be accomplished?

Mr. Newman addressed the Convention, on the above subject, giving

A Few Thoughts on Marketing Honey.

The Arabs, it is stated, obtained their knowledge of Astronomy while crossing the trackless desert, being compelled to observe very closely the position of the stars to guide them in their journey. Just so should the bee-keeper closely watch the continual and varied changes that occur in the demands of the public concerning the preparation of honey for the market. Instead of settling down to the conclusion that, in reference to marketing honey he knows it all, he should be careful to observe what dealers and consumers demand, and then at once,

freely and fully meet the requirements of the trade. In this way only can he become a successful apiarist.

The progressive producer of this God-given sweet is never surprised to find that the methods of preparing honey for the market, which were acceptable one year, are behind the times for the next season.

It should never be forgotten, while marketing honey, that good quality and attractive packages will command the highest price, and be in constant demand. These tempt the purchaser, and cause a steady demand.

A producer who is "behind the times," brings his comb honey to market in 4, 6, 8, or 10 lb. boxes, as he did years ago, and wonders why he is offered 4 or 5 cents per pound less for it than his neighbor, who obtained his honey in single sections. But he finds, to his sorrow, that he is not only "behind the times" in producing the honey, but also sadly behind in obtaining a market for it, even at a discount of one-quarter of its entire value.

Again, a buyer of honey said in our hearing but a few days ago, that it was fun to him to find a man who was not "up to the times" in being posted on the value of his crop. He went down to Water Street and found a nice lot of basswood honey in the hands of a commission merchant who had not taken the trouble to post himself on the value of the honey, and was willing to take an offer some 3 cents per pound less than the real market value.

Those who think they cannot afford to take a paper devoted to the interests of honey producers, often sacrifice 50 times its cost in the sale of their crop of honey—and does it not serve them right? Surely it does! But the innocent sufferers are those who find the market price weakened, if not absolutely broken by such reckless and unprogressive persons. Here, let me say to those bee-keepers who object to have their neighbors take the bee papers, least they may "tread on their corns," that they are not only standing in their own light, but are using an argument which comes home to them with double force, when they find the unsophisticated ones cutting the prices, by their ignorance of what they could and should learn from the papers devoted to bee-culture.

Extracted honey is gaining ground daily, and is destined to become the staple product, while comb honey, ever delicious and enticing, will hold its own as a fancy article.

Extracted honey should be put up in small packages—jars, cans, pails etc., for retail, and in small kegs for wholesale. It is a sad blunder to use barrels holding from 300 to 500 pounds—they are too large to be desirable for the trade, too bulky to be handled with care in transportation, and too dear to be lucrative to the producer, for honey put up in such large barrels is subject to a discount of one cent per pound, because of the difficulty in disposing of it without repacking and dividing into smaller lots.

If a "word to the wise is sufficient," I hope that "the wise will understand," and profit by these brief suggestions of their friend.

Hereupon sprung up a discussion as to the relative value of comb and extracted honey in market.

Mr. Anderson inquired what yield of comb honey is proportionate to a yield of extracted?

Mr. Bull thinks about one-half.

Mr. Niehaus run this season 17 colonies for comb honey, and realized a little over 3,000 lbs.; he also run 8 colonies for extracted, and took about the same number of pounds.

Mr. Thompson can get 300 lbs. of extracted as easily as 100 lbs. of comb honey.

Can one person take care of more bees running for comb honey than he can for extracted?

Mr. Niehaus would rather take care of fifty colonies running for extracted than the same number for comb honey; in fact, he would rather take care of 75 of the former than 50 of the latter.

Adjourned till 1 p. m.

AFTERNOON SESSION.

President appointed Mr. Scudder, Dr. Haskin and Mr. Wemple a committee on exhibits.

Moved and carried, that time for adjournment be fixed at 5½ o'clock.

Mr. Hatfield moved that Mr. Newman be requested to write out his address of yesterday, and publish it in full with the minutes of the Convention. Unanimously adopted.

The first subject being Wintering, a communication was read from T. F. Bingham, Abonia, Mich., entitled

Wintering of Bees.

Enough has been written in the past 20 years to demonstrate that as yet one point in practical apiculture is unsolved—viz., safe wintering. Time out of mind has demonstrated that a good stone cellar, entirely underground, is the safest and most economical plan yet devised. A plank-lined cellar, theoretically, is not as good, for the assumed reason that the radiation of warmth from the ground is more or less impeded by the plank lining, which is a poor conductor of caloric, and a poor absorbent of heat. Nothing but stone lining can secure all the points requisite for a bee-cellar.

It is of but little moment to practical bee-keepers how much theory is put forth. The fact stands out clearly that bees never wintered safely in cold latitudes. There was and is an unmeasured factor staring us boldly in the face, which we call "risk." It is not probable that we shall ever entirely surmount this obstacle to unlimited honey production. To reduce the risk to a minimum is all that we can reasonably hope. Then, with our ready and accumulating resources, we may hope to compensate for our oft-recurring but uncertain losses.

We are indebted to the Rev. L. L. Langstroth for detailed experiments in chaff and wool-packed hives and mats. Time has demonstrated that such protection is valuable; but as yet no safe winter bee hive has been invented. That field is yet wide open. The bee periodicals have teemed with fine logic and profound reasoning, based on assumed facts and uncertain data, that the causes were so-and-so and such-and-such. But the implements have not yet been invented whereby these causes can be removed or avoided. Practically, we are no better off than one year ago. All we can do is to do the best we can with the well-tried ways, until some ingenious inventor shall kindly donate to the Independent Order of Bee-Keepers a double-draft, double-blast, blow-hot-and-blow-cold Eureka pollen extractor.

Upon a sense of the meeting being called for regarding in and out-wintering, the expression was in favor of cellar-wintering.

Question: When is the best time to put bees away in the cellar for winter?

Mr. Thompson thinks the first snow-storm in December is soon enough, as there is more or less of warm weather in November.

Question: When is best to take them out? Answered by several, when the weather becomes settled in spring.

President Miller has practiced taking them out at the beginning of maple bloom.

Mr. Scudder. It is not a safe rule, as frequently maple blossoms are frozen after blooming.

Questions.

Mr. Newman was designated to answer the following questions:

Is it advisable to use full sheets of thin foundation in the surplus boxes? Yes.

Does the size of the cells that the worker bees are cradled in have any influence on the size of the adult bee? Yes.

Are all the eggs laid by the queen hatched by the worker bees? No.

Question: Does it pay to rear dollar queens? Answered by Mr. Good, that he has made it pay to rear them.

Which is the best way to introduce virgin Italian queens into black colonies?

Mr. Bull answered that after a swarm has emerged, to let the virgin queen run in at the entrance of the hive immediately, she will be received at once. Care must be taken to run her in before the bees are settled into quietude in the hive.

Mr. Palmerston inquired for the best method of preserving surplus combs?

Mr. Bull hangs his combs on a rafter in his shop. The moth eggs freeze and fall to hatch in spring, and he puts them in use before they can be occupied with moths.

President Miller places empty combs in the supers, and puts them away in a cold, vacant room.

Doubling-up in Spring.

Question by the President: Can we get more honey by doubling up in spring?

Mr. Niehaus doubles up as strong as possible in the spring.

Mr. Thompson practices the same course. He slices an onion, putting a piece in each hive the day before doubling, then with the use of a little smoke, there will be but little if any fighting.

Miscellaneous.

Mr. Newman, special committee on statistics, gave the following condensed report of those now present: No. of colonies in the spring, 490; No. of colonies now, 1,148; increase, 136 per cent.; extracted honey, 19,270 lbs.; comb honey, 17,867 lbs.; average per colony, 80 lbs. Several report queen-rearing as having been a specialty with them, thereby lessening the general yield.

To get bees off the sections when removing the cases from the hive: President Miller has found no better way than to brush them, hanging the corner of the case on the front of the hive, and brushing with a turkey feather.

Mr. Thompson thinks smoke will sometimes injure honey with its flavor.

The following resolution was then adopted:

Resolved, That all correspondents for the bee papers are hereby requested to write as a suffix to their signatures the actual number of colonies on the 1st of May, with which to commence the season, to enable readers to compare practice and results.

Report of Committee on Exhibits.

The following report was received and adopted:

The committee on exhibits find the following articles on exhibition:

From T. S. Bull & Son, Valparaiso, Ind., one crate of white clover honey, put up in prize boxes, and packed in one of their crates. It is beautiful, and will command admiration in any market.

From H. Niehaus, Burlington, Wis., one crate white clover honey in prize boxes, one crate fall honey in prize boxes, and one crate white clover honey in 1 pound sections. These specimens are all gilt edge, and should bring fancy prices.

From S. D. Buel, Union City, Mich., a sample shipping crate for 2 pound sections. The distinguishing features are: 1. Four pieces running cross-wise of the bottom of the crate, on which to rest the lower corners of the section; 2. An inside groove on each side down which to slip the glass; 3. An in-fitting cover, to prevent the entrance of bees, flies, etc. The crate is very neat in appearance.

From F. W. Chapman, Morrison, Ill., specimen of peat for smoker fuel. This ignites very readily with a match, and furnishes a profusion of smoke.

From Wear L. Drake, Chicago, Ill., a model for brick wintering bee house and summer refrigerator. This is built with double walls of hollow brick, and is frost and heat-proof. The inventor claims, among other things, a uniform temperature during winter and summer and cheapness in construction. L. H. SCUDDER, Ch'n.

Mr. Chapman presented the following preamble and resolution, which were adopted unanimously:

Whereas, The Northwestern Bee-Keepers' Society has enjoyed the hospitality and favors of Mr. T. G. Newman; therefore,

Resolved, That this Society tender to Mr. Newman their thanks for such favors, and wish him abundant success in his laudable undertakings.

The Convention adjourned to meet in Chicago on Wednesday, in the last week of the Exposition, 1882.

C. C. MILLER, Pres't.

C. C. COFFINBERRY, Sec'y.

SELECTIONS FROM OUR LETTER BOX

What's the Matter?—Only 31 colonies of bees reported from this State in the spring, and 2,306 lbs. of honey! I know of one man who has sold about 4,000 lbs. of honey this season in Sampson County, and I can count over 200 colonies that I know of in this township, about 75 of them in American and Langstroth hives, so I think it is safe to say there is at least 1,000 box hives in this county, and judging from what I find in a report from an agricultural paper, there is, perhaps, 50,000 colonies in box hives in the State. The movable frame hives are a new thing here, but many are trying them. NOAH DEATON. Carthage, N. C., Oct. 22, 1881.

Good Honey Crop.—I got an average of 120 lbs. of comb honey per colony in the spring, and when I get out and sell off my crop, I shall have realized satisfactorily. T. L. VON DORN. Omaha, Neb., Oct. 24, 1881.

Bees in Good Condition.—I have sowed 2 acres of cleome and melilot, and ¼ acre of spider plant. I want all of the best plants for bee pasturage. My bees are in better condition than ever before in the fall, and the queens are still laying. R. W. KEENE, M. D. Versailles, Ky., Oct. 25, 1881.

Honey Producing Plants.—Prof. Beal has kindly identified the plants which were shown at the National Convention by our genial friend the Rev. L. Johnson. The larger one is the Sida (Sida spinosa). It is a mallow and so related to the hollyhock, to the abutilon and to the cotton plant. The smaller plant is knotgrass, goosegrass door-weed (Polygonum aviculare). As will be seen, this is a close relative of buckwheat. Among the other interesting things which I learned from our ingenious friend Della Torre, of Maryland, blue thistle was a valued honey plant of his region. I have some of these plants from him, and they prove to be Viper's Bugloss or blue weed (Echium vulgare). This is not a thistle at all, and illustrates the need of scientific names. It does not even belong to the Composite family, but to the Borage family. It has rough bristles, and resembles thistles somewhat in other respects. Gray says it is a troublesome weed in Virginia, and rare northward. I have set out the plants received from Mr. D. in our apiary grounds. I shall see if its reputation in the south as a honey plant is merited north. Experiments in the direction of better and more constant forage for our bees, promises much that is valuable. A. J. COOK. Lansing, Mich.

Honey Cake.—In the BEE JOURNAL for Oct. 5, I noticed that Mrs. J. G. A. Wallace presented 2 honey cakes to the Ontario Bee-Keepers' Convention. If that lady would give the receipt for these cakes in the BEE JOURNAL, it would accommodate many readers. W. S. PIERSON. Eureka, Mich., Oct. 24, 1881.

Dry Season in Georgia.—I had 3 colonies of bees in the spring, and now have 8; I increased by natural swarming. I have taken about 119 lbs. of comb honey; it has been so dry that the bees have not been able to do anything since July came in. I cannot think of doing without the BEE JOURNAL, and you may count me a life subscriber. It is the best paper I get. WM. L. GILREATH. Teloga Spring, Ga., Oct. 11, 1881.

Sweet Clover.—Please let me know through the BEE JOURNAL whether sweet clover will do well on bottom land that overflows once or twice a year, and what honey plants do the best on such land? There are 5,000 to 10,000 acres of such land within reach of one of my apiaries. Will it do to sow sweet clover in winter on thin snow? My bees have averaged about 10 lbs. of comb and extracted honey per colony. I had one colony that gave me 70 lbs. Increase is about 60 per cent. A. J. NORRIS. Cedar Falls, Iowa, Oct. 22, 1881.

[We do not know whether sweet clover will do well on such land, but it is worthy of a liberal trial. Hydro-piper (by many called smartweed, ox-eye and heartsease) is adapted to the locality, and gives an abundance of late though splendid honey. It will do to sow sweet clover on the snow, but we prefer it under.—Ed.]

Sixty Pounds per Colony.—I was brought up among bees. This season is one of the best I have known. Last winter was very hard on them; most of the bees kept by farmers died. I started in the fall of 1880 with 160 colonies in good condition. I put them in two cellars, about Nov. 15; about one-half in each. One lot was in a house cellar; the lowest temperature was 39°, and the highest 48°. The others in an out stone cellar that did not freeze, but the bees did not winter as well; they run down more in the spring, and lost more in the cellar. I commenced taking them out March 16, and finished April 4. I lost in cellars 14. On May 1st, I had 135 in good condition. Now I have 200 in good condition. I have received about 3,200 lbs. of extracted, mostly white, and 4,000 lbs. of comb honey—an average of 60 lbs. per colony. D. E. FLOYD. Ephratah, N. Y., Oct. 24, 1881.

Good Increase.—I put 4 colonies in a cellar last winter, and had but 1 in the spring; they were hybrids. But I can discount most any thing in the way of increasing, for they showed such a vigorous disposition to increase. I did not feel willing to trust them, and divided the bees, brood and honey, till I obtained 4 new colonies. At present they are strong, and full for winter, after taking 100 lbs. comb honey in 1 and 2-lb. sections. I could have had 50 or 100 lbs. of extracted, had I an extractor. S. J. MCKINNEY. Burlington, Iowa, Oct. 23, 1881.

Bees in Canada.—Bees have done unusually well in this part of the country. I wintered without loss, and the bees were in good condition. They did not swarm as much as in other seasons, but gathered twice the amount of honey, and the colonies are the best I ever had at this time of the year. The honey, in glass boxes, holding 10 to 12 pounds, sells readily at 15 cts. per pound. P. B. INGLIS. Castleton, Ont., Oct. 17, 1881.

[Had it been in 1 or 2 lb. sections, it would probably have sold for 20 cents or more per pound.—Ed.]

The Southwestern Wisconsin Bee-Keepers' Association will hold its next meeting in Platteville, Grant Co., Wis., Nov. 30, 1881. N. E. FRANCE, Sec., Platteville, Wis.

Special Notices.

Single copies of the JOURNAL sent postage paid for 5 cents each.

Advertisements intended for the BEE JOURNAL must reach this office by Saturday of the previous week.

Ribbon Badges, for bee-keepers, on which are printed a large bee in gold, we send for 10 cts. each, or \$8 per 100.

Articles for publication must be written on a separate piece of paper from items of business.

Photographs of prominent Apiarists—Langstroth, Dzierzon, and the Baron of Berlepsch.—Price 25 cents each.

When changing a postoffice address, mention the old as well as the new address.

Those who may wish to change from other editions to the Weekly, can do so by paying the difference.

Constitutions and By-Laws for local Associations \$2.00 per 100. The name of the Association printed in the blanks for 50 cents extra.

An Agreeable Dressing for the Hair, that will stop its falling, has been long sought for. Parker's Hair Balsam, distinguished for its purity, fully supplies this want. 44w4

A Sample Copy of the Weekly BEE JOURNAL will be sent free to any person. Any one intending to get up a club can have sample copies sent to the persons they desire to interview, by sending the names to this office.

Examine the Date following your name on the wrapper label of this paper; it indicates the time to which you have paid. Always send money by postal order, registered letter, or by draft on Chicago or New York. Drafts on other cities, or local checks, are not taken by the banks in this city except at a discount of 25 cents, to pay expense of collecting them.

Premiums.—For a club of 2, weekly we give a copy of "Bees and Honey;" for a club of 5, weekly, we will give a Cook's Manual, a Bee-Keeper's Guide, bound in cloth; for a club of 6, we give a copy of the JOURNAL for a year free. It will pay to devote a few hours to the BEE JOURNAL.

Women are Everywhere Using and recommending Parker's Ginger Tonic, because they have learned from experience that it speedily overcomes despondency, indigestion, pain or weakness in the back and kidneys, and other troubles peculiar to the sex.—Home Journal. See adv. 44w4

It would save us much trouble, if all would be particular to give their post office address and name, when writing to this office. We have letters (some inclosing money) that have no name, post-office, County or State.—Also, if you live near one postoffice and get your mail at another, be sure to give the address we have on our list.

Why suffer such unspeakable tortures? Rheumatism has been conquered. Kendall's Spavin Cure is the Victor. See advertisement. 44

We have a SPECIAL EDITION of the Weekly BEE JOURNAL, just as it will be published in 1882 (16 pages), for distribution at Fairs, Conventions, etc. Any one who may desire to distribute them to bee-keepers will be supplied free, in any quantity they may be able to judiciously use.

Honey and Beeswax Market.

BUYERS' QUOTATIONS.

OFFICE OF AMERICAN BEE JOURNAL,
Monday, 10 a. m., Oct. 31, 1881.

The following are the latest quotations for honey and beeswax received up to this hour:

CHICAGO.

HONEY.—The market is lively and prices steady. We quote light comb honey, in single comb boxes, 18@20c; in larger boxes 2c. less. Extracted 8@9c.
BEESWAX.—Prime quality, 18@22c.
AL. H. NEWMAN, 972 W. Madison St.

NEW YORK.

HONEY.—The advices give a middling fair crop of honey. Moderate lots have arrived, but the demand so far has been very slow, and but little improvement can be expected until we have cooler weather.
We quote as follows: White comb, in small boxes, 18@20c; dark, in small boxes, 15@17c. Extracted, white, 10@11c; dark, 7@9c.
BEESWAX.—Prime quality, 21@22c.
THORN & CO., 11 and 13 Devoe avenue.

ST. LOUIS.

HONEY.—Steady. Comb 18@20c, strained and extracted, 9@12c. Top figures for choice bright in fancy packages. On Tuesday was effected the remarkably large sale of 9,000 lbs. strained and extracted (in bbls.) at 1c.
BEESWAX.—Selling lightly at 19@20c.
R. C. GREEN & CO., 117 N. Main Street.

SAN FRANCISCO.

HONEY.—A slightly improved inquiry has been observed, and the few sales reported show a little more disposition on the part of buyers to pay full prices.
We quote white comb, 18@20c; dark to go, 14@14c. Extracted, choice to extra white, 9@10c; dark and candied, 7@8c. BEESWAX—22@25c.
STEARN & SMITH, 425 Front Street.

CLEVELAND.

HONEY.—There is an active steady demand in our market for one and two pound sections of white honey, all receipts finding ready sale at 21c. for 1 pound, and 20c. for 2 lb. sections, unglazed. Extracted honey continues dull at 12c.
BEESWAX—23@25c.
A. C. KENDEL, 115 Ontario Street.

CINCINNATI.

HONEY.—Is in good demand here now. I quote: Good comb honey, in sections, is worth 18@20c, on arrival. Extracted, 7@9c, on arrival.
BEESWAX.—18@22c, on arrival. I have paid 25c. per lb. for choice lots. C. F. MUTH.

BOSTON.

HONEY.—1-pound combs are a desirable package in our market, and a large quantity could be sold at 20@22c, according to quality.
BEESWAX.—P. line quality, 25c.
CROCKER & BLAKE, 9 Chatham Street.

BALTIMORE.

HONEY.—But little on the market, and prices are not quoted.
BEESWAX.—Southern, pure, 21@23c.; Western, pure, 21@22c.; grease wax, 11c.—Baltimore Market Journal.

INDIANAPOLIS.

HONEY.—New, in 1 or 2 lb. sections, 22@25c.—Indianapolis Stock Review.

PHILADELPHIA.

HONEY.—The supply and demand are alike nominal.
BEESWAX.—Best light 23@25c.—Philadelphia Merchants' Guide.

Local Convention Directory.

1881. Time and Place of Meeting.
Nov. 30—S. W. Wisconsin, at Plattville, Wis.
N. E. France, Sec., Plattville, Wis.
Dec. 8—Michigan State, at Battle Creek, Mich.
T. F. Bingham, Sec., Abronis, Mich.
1882.
Jan. 10—Cortland Union, at Cortland, N. Y.
C. M. Bean, Sec., McGrawville, N. Y.
25—Northeastern, at Utica, N. Y.
Geo. W. House, Sec., Fayetteville, N. Y.
April 11—Eastern Michigan, at Detroit, Mich.
A. B. Weed, Sec., Detroit, Mich.
25—Texas State, at McKinney, Texas.
Wm. R. Howard, Sec.
May—Champlain Valley, at Bristol, Vt.
T. Brookins, Sec.

In order to have this table complete, Secretaries are requested to forward full particulars of time and place of future meetings.—ED.

Subscriptions may commence with the first number of any month in the year.

Premiums.—Those who get up clubs for the Weekly BEE JOURNAL for 1882, will be entitled to the following premiums:

For a Club of 2.—a copy of "Bees and Honey."
" 3.—an Emerson Binder for 1882.
" 4.—Cook's (Bee) Manual, paper.
" 5.—" " cloth.
" 6.—Weekly Bee Journal for 1 year.

Given's Foundation Press.

The latest improvement in Foundation. Our thin and common Foundation is not surpassed. The only invention to make Foundation in the wired frame. All Frames warranted to give satisfaction. Send for Catalogue and Sample. 2w1y
D. S. GIVEN, Hoopston, Ill.

Advertisements.

THE AMERICAN BEE JOURNAL is the oldest Bee Paper in America, and has a large circulation in every State, Territory and Province, among farmers, mechanics, professional and business men, and is, therefore, the best advertising medium.

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I keep at all times a full supply of Seeds for Honey Plants, including

Melilot Clover,
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Mammoth Mignonette, &c.

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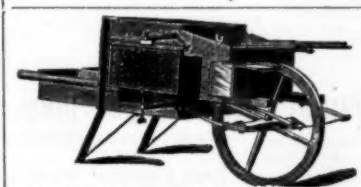
I have procured a limited quantity of the Seed of this new Honey Plant so highly spoken of by Dr. G. L. Tinker, on page 307 of the JOURNAL.

It may be sown broadcast in early spring or drilled in. The rows may be two or three feet apart and the seeds only a few inches apart in the rows. It will bear to grow very thick or if scattered will grow larger and throw up more stalks.
Price, 50 cents per pound. If sent by mail, add 20 cents per pound for postage.

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REVOLVING COMB-HANGER.

Tool Box and Recording Desk Combined.
Carries honey from the hive to the Extractor, a set of apian tools, metal-lined drawers for broken combs and fragments of wax, revolving comb-hanger, which holds comb firmly while pruning or cutting out queen cells, writing desk, and wash basin; will not break nor bruise comb; adjustable to fit all sizes of extracting and brood combs, and is less laborious to handle than the ordinary hand-baskets. Write your address on a postal card, and address it to JOHN M. DAVIS, 317y
Swiry Patentee and Proprietor, Spring Hill, Tenn.

Rev. A. SALISBURY

Camargo, Douglas County, Ill.

Warranted Italian Queens, \$1.00; Tested Italian Queens, \$2; Cyprian Queens, \$2.00; Tested Cyprian Queens, \$4; 1 frame Nucleus, Italian, \$4.00; 1 frame Nucleus, Cyprian, \$5; Colony of Italians, 8 frames, \$8.00; Colony of Cyprians, 8 frames, \$10.00. Wax worked 10c. per lb. Pure Comb Foundation, on Dunham Machine, 25 lbs. or over. 1wly
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The Bee-Keeper's Guide; OR, MANUAL OF THE APIARY,

By A. J. COOK,

Of Lansing, Professor of Entomology in the State Agricultural College of Michigan.

320 Pages; 133 Fine Illustrations.

This is a new edition of Prof. Cook's Manual of the Apiary, enlarged and elegantly illustrated. The first edition of 3,000 copies was exhausted in about 18 months—a sale unprecedented in the annals of bee-culture. This new work has been produced with great care, patient study and persistent research. It comprises a full delineation of the anatomy and physiology of the honey bee, illustrated with many costly wood engravings—the products of the Honey Bee; the races of bees; full descriptions of honey-producing plants, trees, shrubs, etc., splendidly illustrated—and last, though not least, detailed instructions for the various manipulations necessary in the apiary.

This work is a masterly production, and one that no bee-keeper, however limited his means, can afford to do without. It is fully "up with the times" on every conceivable subject that can interest the apiarist. It is not only instructive, but intensely interesting and thoroughly practical.

Read the following opinions of the Book:

All agree that it is the work of a master and of real value.—L'Apiculture, Paris.

I think Cook's Manual is the best of our American works.—Lewis T. Goley.

It appears to have cut the ground from under future book-makers.—British Bee Journal.

Prof. Cook's valuable Manual has been my constant guide in my operations and successful management of the apiary.—J. P. WEST.

I have derived more practical knowledge from Prof. Cook's New Manual of the Apiary than from any other book.—E. H. WYCKOFF.

This book is just what everyone interested in bees ought to have, and which, no one who contains it, will ever regret having purchased.—Mich. Far.

Is a masterly production, and one that no bee-keeper, however limited his means, can afford to do without.—Nebraska Farmer.

To all who wish to engage in bee-culture, a manual is a necessity. Prof. Cook's Manual is an exhaustive work.—Herald, Monticello, Ill.

With Cook's Manual I am more than pleased. It is fully up with the times in every particular. The richest reward awaits its author.—A. E. WENZEL.

My success has been so great as to almost astonish myself, and much of it is due to the clear, disinterested information contained in Cook's Manual.—WM. VAN ANTWERP, M. D.

It is the latest book on the bee, and treats of both the bee and hives, with their implements. It is of value to all bee-raisers.—Ky. Live Stock Record.

It is a credit to the author as well the publisher. I have never yet met with a work, either French or English, which like as much.—L'ANNEE DU BOIS, editor of the Bulletin d'Apiculture, France.

It not only gives the natural history of these industrious insects, but also a thorough, practical, and clearly expressed series of directions for their management; also a botanical description of honey producing plants; and an extended account of the enemies of bees.—Democrat, Palisade, N. Y.

We have perused with great pleasure this valuable manual of the bee-keeper. It is replete with the best information on everything belonging to apiculture. To all taking an interest in this subject, we say, obtain this valuable work, read it carefully and practice as advised.—Agriculturist, Quebec.

This book is pronounced by the press and leading bee-men to be the most complete and practical treatise on bee-culture in Europe or America; a scientific work on modern bee management; every experienced bee-man will welcome it, and it is essential to every amateur in bee-culture. It is handsomely printed, neatly bound, and is a credit to the West.—Western Agriculturist.

This work is undoubtedly the most complete manual for the instruction of bee-keepers which has ever been published. It gives a full explanation regarding the care and management of the apiary. There is no subject relating to the culture of bees left untouched, and in the compilation of the work Prof. Cook has had the advantage of all the previous knowledge of apianists, which he uses admirably to promote and make popular this most interesting of all occupations.—American Inquirer.

It may safely be pronounced the most complete and comprehensive of the several manuals which have recently appeared on the subject of bees and their handling in apiaries. The studies of the structure of the bee, the different varieties, the various bee products, and following these the points of management, extending to the smallest details, are all of high and practical value. Prof. Cook has presented the latest phases of progress in bee-keeping, and writes of the themes discussed in the light of his own experience.—Pacific Rural.

Of the many excellent works which we have examined on bee-culture, we consider Prof. Cook's the most valuable for the study of those who contemplate going into the business or are already keeping bees. If thoroughly studied, and its teachings conformed to, by the apiarist, who exercises a reasonable degree of common sense, he or she cannot fail to achieve at least a reasonable degree of success. The author adresses himself to the work with a degree of enthusiasm which carries the reader with him to the end.—Kansas Farmer.

Cook's Manual of the Apiary holds in America a high rank, that is accorded in Germany to the book of which Dzierzon is the author; the only difference being that Prof. Cook's Manual combines the profundity of the German pastor with the superiority of the practical American. It refers in several instances to Darwin; and does not belong to that class which hates everything that is foreign, for he speaks of German naturalists with great reverence.—German Freidenker, Milwaukee, Wis.

PRICE—Bound in cloth, \$1.25; in paper cover, \$1.00, by mail prepaid. Published by THOMAS G. NEWMAN, 972 West Madison Street, CHICAGO, ILL.

THE AMERICAN BEE JOURNAL

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